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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,151	02/14/2001	Ralph E. Frazier	8605	2317

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EXAMINER

YIGDALL, MICHAEL J

ART UNIT

PAPER NUMBER

2122

DATE MAILED: 09/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,151

Applicant(s)

FRAZIER, RALPH E.

Examiner

Michael J. Yigdall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2001 and 30 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 have been examined. The date of priority considered for this application is 14 February 2001.

Specification

2. The attempt to incorporate subject matter into this application by reference to a copending patent application, "Operating Software Performance Monitor," is improper because the application serial number has not been provided (see page 1, first paragraph).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 09/782,150. Although the conflicting claims are not identical, they are not patentably distinct from each other because both recite analogous methods related to operating software scheduling information in a computer system.

For example, claim 1 of Application No. 09/782,150 recites a method for controlling system performance based on the analysis of scheduling information, while both claims 1 and 15 of the present application recite a method for capturing this information. Claim 4 of the present application further limits claim 1 to show scheduling information that is related to system performance, such as run-time length. Furthermore, claim 6 of Application No. 09/782,150 and claim 18 of the present application both recite computer systems for capturing operating software scheduling information during execution. The limitations recited in the dependent claims of the present application are also related to the claims of Application No. 09/782,150.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(h), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6-12 and 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,049,798 to Bishop et al.

With respect to claim 1, Bishop et al. disclose a method of capturing operating software scheduling information during execution of operating software (see the abstract, which shows the real-time capture of internal resource utilization data; note that CPU utilization data is considered a form of scheduling information), the method comprising the steps of:

(a) compiling operating software scheduling information capture software as part of the operating software (see column 11, lines 1-4, which shows the operating system service that is used to capture event traces related to processes; the step of compiling the software prior to its execution is inherent);

(b) invoking operating software scheduling information capture (see column 20, lines 55-67, and column 21, lines 1-4, which show a procedure for invoking the capture of performance data; note that this data includes CPU utilization, a form of scheduling information); and

(c) recording operating software scheduling information (see column 22, lines 18-22, which shows that the resource utilization data is recorded for a certain amount of time).

With respect to claim 2, Bishop et al. disclose the method as claimed in claim 1, wherein the operating software scheduling information capture procedure is invoked on an operating software task switch (see column 14, lines 14-15 and 55-60, which show that a mode switch, for example, can invoke the capture of scheduling information; also see Fig. 13A, which shows that data is captured for a process switch, i.e. a task switch).

With respect to claim 3, Bishop et al. disclose the method as claimed in claim 1, wherein the operating software scheduling information recorded includes information updated or maintained by the operating software in relation to the scheduling of a program (see Fig. 13A, which shows records that include execution time and interrupt time, information maintained by the operating system in relation to scheduling).

With respect to claim 4, Bishop et al. disclose the method as claimed in claim 1, wherein the operating software scheduling information recorded includes task identification, task priority, and task run-time length (see column 10, lines 51-56, which shows that CPU scheduling information is recorded by monitoring the run-time length of a process or task at a defined priority level; also see Fig. 13A, which shows that the process ID, i.e. the task identification, is also captured).

With respect to claim 6, Bishop et al. disclose the method as claimed in claim 1, wherein the operating software scheduling information is recorded to a ledger (see column 20, lines 36-37 and 50-52, which show that the data, including CPU scheduling information, is initially recorded to a buffer).

With respect to claim 7, Bishop et al. disclose the method as claimed in claim 6, wherein the ledger is at least one of a circular or fixed length ledger (see column 21, lines 23-26, which shows that data is discarded from the pipe if it is not read quickly enough; this implies that the buffer is a circular ledger).

With respect to claim 8, Bishop et al. disclose the method as claimed in claim 1, wherein the scheduling information includes at least one of the number of program schedules, program

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preempts, and interrupts (see column 14, lines 14-15 and 35-45, which show that every interrupt is recorded).

With respect to claim 9, Bishop et al. disclose the method as claimed in claim 1, wherein the scheduling information includes at least one of the highest priority attained, program identity, and length of run-time (see column 21, lines 49-52, which shows that the process name, i.e. the program identity, is included in the captured scheduling information).

With respect to claim 10, Bishop et al. disclose the method as claimed in claim 1, wherein the scheduling information includes at least one of the lowest priority attained, program identity, and length of run-time (see column 21, lines 49-52, which shows that the process name, i.e. the program identity, is included in the captured scheduling information).

With respect to claim 11, Bishop et al. disclose the method as claimed in claim 1, wherein the scheduling information includes at least one of the number of times in the idle loop and length of run-time (see Fig. 13A, which shows records that include execution time, i.e. the length of run-time).

With respect to claim 12, Bishop et al. disclose the method as claimed in claim 1, wherein the scheduling information includes a sequential record of at least one of scheduled programs, priorities, and events (see column 15, lines 54-64, which shows that pairs of events are matched with timing information to compose a sequential record of events).

With respect to claim 14, Bishop et al. disclose the method as claimed in claim 1, wherein the operating software scheduling information capture is invoked on an event occurrence (see column 14, lines 14-15 and 55-60, which show that a mode switch, among other events, can invoke the capture of scheduling information).

With respect to claim 15, see claim 1, including parts (a) through (c), above.

With respect to claim 16, Bishop et al. disclose the method as claimed in claim 15, wherein said operating software scheduling information capture software is not resident on an external device (see column 4, lines 32-34, which shows that the software can be internal to the system; also see column 22, lines 59-63, which shows that external hardware is not needed).

With respect to claim 17, Bishop et al. disclose the method as claimed in claim 15, wherein said operating software scheduling information capture software is not a separate task scheduled by an operating software scheduler (see column 11, lines 1-10 and 30-35, which show that the capture of scheduling information is performed by a device driver, which is not a separate task scheduled by a OS scheduler).

With respect to claim 18, Bishop et al. disclose a computer system for capturing operating software scheduling information during execution of said operating software (see claim 1 above) comprising:

- (a) a processor for receiving and transmitting data (see item 190 of Fig. 14); and
- (b) a memory coupled to the processor, the memory having stored therein sequences of instructions which, when executed by the processor, cause the processor to invoke operating software scheduling information capture software, and to record operating software scheduling information (see item 194 of Fig. 14; also see column 16, lines 3-14, which shows the application programming interface that is used to invoke the data capture; note that the instructions are inherently stored in memory and executed by the processor).

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With respect to claim 19, Bishop et al. disclose the computer system as claimed in claim 18, wherein said operating system scheduling information capture software is internally processed on said processor (see claim 16 above).

With respect to claim 20, Bishop et al. disclose the computer system as claimed in claim 18, wherein said operating software scheduling information capture software is not a separate task scheduled by an operating software scheduler (see claim 17 above).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop et al. in view of U.S. Pat. No. 5,870,604 to Yamagishi.

With respect to claim 5, Bishop et al. disclose the method as claimed in claim 1, but do not show the limitation wherein the operating software scheduling information includes a task waiting count. Bishop et al. do show that CPU utilization and other resources are monitored to enable one to improve the efficiency of a computer system (see column 3, lines 12-33).

Yamagishi discloses a table on which the number of jobs waiting for execution, i.e. a task waiting count, is recorded (see items 9 and 92 of Fig. 3). A CPU monitor obtains the information from a job scheduler (see column 3, lines 59-65) for the purpose of distributing load among processors, thereby improving efficiency (see column 2, lines 36-39).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to record a task waiting count in the system of Bishop et al. for the same reason taught by Yamagishi, to help improve efficiency.

With respect to claim 13, Bishop et al. disclose the method as claimed in claim 1, but do not show the limitation wherein the scheduling information includes at least one of the number and identity of programs waiting to run. Bishop et al. do show that CPU utilization and other resources are monitored to enable one to improve the efficiency of a computer system (see column 3, lines 12-33).

Yamagishi discloses a table on which the number of jobs waiting for execution, i.e. the number of programs waiting to run, is recorded (see items 9 and 92 of Fig. 3). A CPU monitor obtains the information from a job scheduler (see column 3, lines 59-65) for the purpose of distributing load among processors, thereby improving efficiency (see column 2, lines 36-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to record the number of programs waiting to run in the system of Bishop et al. for the same reason taught by Yamagishi, to help improve efficiency.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. No. 5,590,056 to Barritz discloses a method for monitoring computer program usage and for recording an event log. U.S. Pat. No. 6,341,303 to Rhee et al. discloses a method for scheduling resources based on a plan. U.S. Pat. No. 6,467,052 to Kaler et al. discloses a method for analyzing the performance of a computer system.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352.

The examiner can normally be reached on Monday through Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MY

Michael J. Yigdall
Examiner
Art Unit 2122

mjy
September 9, 2003



JOHN CHAVIS
PATENT EXAMINER
ART UNIT 2124